

Patent Application No. 10/713,141
Amdt. date: February 23, 2005
Response to November 24, 2004, Office Action

In the Specification:

1. Please replace the paragraph beginning at page 12, line 17, with the following amended paragraph:

In lieu of, or in combination with any passive safety barrier 20, an active or reactive safety barrier or barriers similarly may be used to impede or even prevent occupant egress. FIGs. 3-5 and 9 illustrate various alternative embodiments of inflatable emergency, reactive, or active, vehicle safety systems 110, 210, 310, 410 comprising one or more active or reactive safety barriers 120, 220, 320. Referring to FIGs. 3 and 6, another illustrative vehicle safety system 110 is depicted. Vehicle safety system 110 comprises an inflatable barrier or tube 120 and illustratively an associated shield 121. Tube 120 further comprises pivot mounts 28 which are configured to interact with previously described guide tracks 18, 19 such that when the tube 120 is inflated, as will be described below, the mounts 28 may travel down guide slots (not shown) in the tracks 18, 19. Referring to FIG. 4, illustrative vehicle safety system 210 comprises an inflatable barrier or curtain 220, which illustratively comprises generally horizontal bladders 67 and generally vertical bladders 68, and further comprises tethers 26'. When the curtain 220 inflates, as will be described below, the tethers 26' interact with guide tracks 18, 19 to guide the curtain 220 to the proper deployed position. Referring now to FIGs. 5 and 6, another illustrative vehicle safety system 310 is depicted. Vehicle safety system 310 is a combination of previously described safety systems 110 and 210 and therefore comprises both inflatable barriers 120, 220 and their associated components, including for example inflator 60 in fluid communication with the tube 120 through fill tube 61 and gas inlet 72, pivot mounts 28 and tethers 26 (not shown), each configured to interact with tracks 18, 19. Depicted in FIG. 9 is another illustrative vehicle safety system 410. Illustrative safety system 410 is a combination of previously described safety systems 110 and 210 and therefore comprises passive barrier(s) 20 and reactive barrier ~~[[210]]~~ 220 in combination. Those skilled in the art will realize that passive barrier(s) 20 may similarly be combined with reactive barriers ~~[[110]]~~ 120 and a combination of reactive barriers 120 and 220 as shown for example in vehicle system 310 as shown in FIG. 5.

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2. Please replace the paragraph beginning at page 14, line 3, with the following amended paragraph:

When the tube 120 and curtain 220 are in the stowed position, the tube 120 and the horizontal and vertical bladders 67, 68 are substantially devoid of fluid so that the exit of the vehicle 11 is substantially uncovered by the tube 120 and/or curtain 220, thereby allowing an occupant to enter or egress the through the exit substantially unimpeded by the tube 120 and/or the curtain 220. In contrast, the act of inflation substantially fills the bladders 67, 68, 120 with fluid, thereby deploying or moving to the deployed position the tube 120 and shield 121 and/or curtain 220, or both 310 illustratively with the mounts 28 and/or tethers 26 traveling down guide slots (not shown) in the tracks 18, 19. After inflation and deployment of the tube 120 and/or the curtain 220 to the deployed position, at least a portion of the exit of the vehicle is covered in order to ~~[[impeded]]~~ impede the occupant's egress through the exit. In the case of passive/reactive safety system 410, the passive barrier 20 provides the reaction surface to guide the reactive barrier curtain 220, or the tube 120, or the combination tube 120 and curtain 220 of system 310, thereby obviating the need for the reactive barrier 120, 220 to be configured with any tethers 26 at all (FIG. 9); although, tethers 26 or any other guide system may be used if desired. Both the tube 120 and/or the curtain 220 inflate(s) rapidly and may be, for example, unvented, allowing them to remain inflated long enough to contain the occupant 90 within the cab as defined by the FOPS and the deployed reactive barriers, for example tube 120 and shield 121 and/or curtain 220. In addition, to providing containment, the inflated tube 120 and/or curtain 220 may, but need not also cushion the occupant. In system 110, because it is desirable for deployment of the tube 120 to extend downwardly toward the seat 12 in order to prevent ejection or egress, it may be desirable to include another tube 120, to provide additional cushioning for the occupant's head. Such additional cushioning is already provided by the curtain 220 in systems 210, 310 and 410.